

Amendments to the Claims

1. (previously presented) A method for the manufacture of a high temperature superconducting layer on a substrate comprising the following steps:
 - a. deposition of an $\text{RBa}_2\text{Cu}_3\text{O}_7$ -layer onto the substrate with a low growth rate less than 1 nm/s, wherein R represents yttrium, an element of the group of rare-earth elements (atomic number 57-71) or mixtures of two or more of these elements;
 - b. deposition of an $\text{XBa}_2\text{Cu}_3\text{O}_7$ -layer onto the $\text{RBa}_2\text{Cu}_3\text{O}_7$ -layer with a high growth rate greater than 1 nm/s, wherein X represents yttrium, an element of the group of rare-earth elements (atomic number 57-71) or mixtures of two or more of these elements.
2. (previously presented) A method according to claim 1, wherein the high growth rate is greater than 2 nm/s.
3. (previously presented) A method according to claim 1, wherein the $\text{RBa}_2\text{Cu}_3\text{O}_7$ -layer comprises a thickness of less than 500 nm.
4. (previously presented) A method according to claim 1, wherein the $\text{RBa}_2\text{Cu}_3\text{O}_7$ -layer has a thickness of greater than 5 nm.
5. (previously presented) A method according to claim 1, wherein the $\text{XBa}_2\text{Cu}_3\text{O}_7$ -layer has a thickness of greater than 1 μm .
6. (previously presented) A method according to claim 1, wherein the $\text{RBa}_2\text{Cu}_3\text{O}_7$ -layer is deposited onto an at least biaxially textured substrate or a substrate with an at least biaxially textured buffer layer.
7. (previously presented) A method according to claim 1, wherein the $\text{XBa}_2\text{Cu}_3\text{O}_7$ -layer is deposited as a precursor layer, comprising the metal components of the high temperature superconducting layer.

8. (previously presented) A method according to claim 7, wherein the precursor layer is transformed in a further method step by a temperature treatment with a high transformation rate into a superconducting $\text{XBa}_2\text{Cu}_3\text{O}_7$ -layer.

9. (previously presented) A method according to claim 8, wherein the transformation rate is greater than 2 nm/s.

10. (previously presented) A method according to claim 1, wherein R represents a rare-earth element of the group comprising La, Pr, Nd, Sm, Eu, and Gd, or compounds comprising to at least 50% of one or more of these elements in mixtures with other rare-earth elements.

11. (cancelled)